

**UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

**IN RE: NATIONAL COLLEGIATE  
ATHLETIC ASSOCIATION STUDENT-  
ATHLETE CONCUSSION LITIGATION**

MDL NO. 2492

Master Docket No. 13-cv-09116

Judge John Z. Lee

Magistrate Judge Geraldine Soat  
Brown

**REPORT OF THE PROPOSED MEDICAL SCIENCE COMMITTEE  
IN SUPPORT OF MOTION FOR PRELIMINARY APPROVAL**

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## **I. INTRODUCTION**

1. The proposed Medical Science Committee (“Committee”) is composed of four leading experts in the fields of neurology and neuropsychology with a specific emphasis on repetitive brain trauma in sports and its consequences, as well as an independent Chair.

2. Lead Class Counsel and counsel for the National Collegiate Athletic Association (“NCAA”) requested that the Committee address the specific framework it intends to use to score the Questionnaires for purposes of qualifying Settlement Class Members for Medical Evaluations.<sup>1</sup>

3. The Medical Science Committee, Lead Class Counsel, Special Class Counsel for Medical Monitoring Relief, and the NCAA met in New York on January 20, 2015 to discuss the goals of the Medical Monitoring Program and the manner in which it would be implemented. Based on the consensus reached at that meeting, the Committee drafted the Questionnaire, identified the standardized Psychological/Cognitive Functioning scales to be used, and developed a three-phased approach for the refinement of Cut Scores during the life of the Program. The Medical Science Committee engaged in multiple follow-up telephone calls from February through April 2015 to refine the approach proposed in this report.

## **II. EXPLANATION OF THE SCREENING QUESTIONNAIRE**

### **A. The Contents of the Screening Questionnaire**

4. The goal of the Screening Questionnaire is to identify clinically meaningful impairments related to concussions and/or subconcussive hits and require further medical evaluation.

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<sup>1</sup> Capitalized terms not otherwise defined in this document shall have the meaning ascribed to them in the Amended Settlement Agreement filed contemporaneously herewith.

5. The Questionnaire begins with a History section, which includes questions regarding the Class Member's medical, athletic, and concussion history, and other relevant background information. Although the responses to the History section will not be used initially as part of the Screening Algorithm, the information obtained will be important in determining risk factors for later life clinical symptoms and will be made available to clinicians conducting the in-person Medical Evaluation if the Class Member receives one.

6. Following the History section, there are five standardized Psychological/Cognitive Functioning scales (hereafter referred to as the "Scales"), measuring: Mood/Distress (two scales), Behavior/Executive Functioning (one scale), Cognitive Functioning (one scale), and Functional Independence (one scale).

7. All of the Scales are widely accepted by clinicians and scientists as appropriate, reliable, and valid measures that have been administered to large groups of healthy and clinically impaired individuals across various demographic groups.

#### **B. Qualifying For A Medical Evaluation**

8. The published normative and clinical data for the Scales provide a comparison of participating Class Member's responses to those of appropriate reference groups. Specific Cut Scores have been determined by the Medical Science Committee based on existing published normative data using standardized scores (e.g., T-Scores) or published "impairment" levels. A Class Member who scores above the Cut Score on any one or more of the Scales and does not score above the Cut Score on the symptom validity measure (see paras. 13-14 below) will screen in for the next appropriate phase of evaluation through the Medical Monitoring Program.

9. Initially, Cut Scores for the Screening Questionnaire responses will be determined using existing published recommendations. This approach is designed to reduce false negatives while recognizing that false positives will likely be increased. Under this initial approach, almost all individuals with clinically meaningful impairments will receive a Medical Evaluation, except as noted below.

10. The Committee proposes a three-phase implementation of Cut Scores: (1) During the first year of the Plan, more liberal Cut Scores will be used, based on existing published data/guidelines; (2) After the first year of the Plan, preliminary analyses of the data from The Scales will be conducted to assure that the initial Cut Scores are appropriate and, if not, adjustments will be made; and (3) After two years, prediction modeling analyses will be conducted using the results of The Scales' Cut Scores as predictors and the diagnostic determination made at the Medical Evaluation as the outcome variables. Based on these prediction models, new Cut Scores will be determined that will reduce both false positives and false negatives, while maximizing true positives. These evaluations may be conducted earlier if, in the view of the Medical Science Committee, an adequate number of responses is received to conduct appropriate evaluation of the data.

11. The Medical Science Committee recommends that any Class Member who completed a Screening Questionnaire during the first two years and did not qualify for a Medical Evaluation (because their scores on the Scales did not reach the initial Cut Scores OR their symptom validity score was over the initial Cut Score), but who would have screened in if the subsequent modified Cut Scores and algorithm were used, will be contacted and offered a Medical Evaluation.

12. Settlement Class Members who score in the "impaired" range on the mood and

behavior measures but not on the cognitive measures will not automatically qualify for a Medical Evaluation. Instead, those Settlement Class Members will be further screened via telephone by a Behavioral Health Specialist (e.g. clinical social worker or psychiatric nurse) or will be referred to a mental health specialist outside of the Medical Monitoring Program. This approach will prove to be more efficient, clinically sensitive, and clinically appropriate as individuals with primarily or solely behavioral/mood symptoms would be evaluated by a specialist in that area rather than a neurologist/neuropsychologist specializing in dementia and cognitive impairments.

### **C. Measure Of Symptom Validity**

13. An additional goal of the Screening Questionnaire will be to detect potential exaggeration of symptoms through the inclusion of an appropriate measure of symptom validity (Heilbroner et al., 2010). This approach is an accepted and established method whenever clinical or monetary decisions are made in litigation-related evaluations, or when clinical decision-making may be altered based on the validity of the patient's responses.

14. The specific instrument selected to detect symptom validity (SIMS) has been extensively studied and has been determined to be appropriate for this purpose by the Medical Science Committee. SIMS is intended to reduce false positives by detecting individuals whose responses are likely a reflection of symptom exaggeration and/or malingering (and, therefore, not reflective of true clinical impairment). Such individuals will not receive a Medical Evaluation.

15. We will conduct preliminary analyses of the data after year one to assure that initial symptom validity (SIMS) Cut Scores are appropriate. After two years, prediction models will be created using the results of the SIMS Cut Scores as predictors and the diagnostic determination made at the Medical Evaluation as the outcome variables. Based on these prediction models, new SIMS Cut Scores will be determined that will reduce both false positives

and false negatives, while maximizing true positives.

**D. Appropriateness of Questionnaire for the Program**

16. The Court has inquired as to the overall appropriateness of such a Questionnaire. A substantial and mature body of literature from the clinical and research setting shows practical experience with using such instruments to identify clinically significant symptomology with a reasonable expenditure of resources short of providing a medical evaluation to all persons in the populations of interest (e.g., Seichepine et al., 2013; Fraser et al., 2014; Brain Health Registry, see website: <http://www.brainhealthregistry.org/>).

17. These studies incorporate scientifically and clinically accepted standardized scales/measures (including several included in this Screening Questionnaire) that are administered online to large groups of respondents.

18. However, it is widely accepted that the specific Cut Scores used to determine levels of impairment or screening outcome must be developed based on: (1) the specific compiled battery of instruments; and (2) the target outcome variable that is being predicted (e.g., actual clinical need for an in-person clinical evaluation and the diagnosis of a clinically meaningful condition such as dementia), in the specific population under study (e.g., former college athletes).

19. It is for this reason that the three-phase approach to the determination of Cut Scores has been proposed as described above.

20. The Medical Science Committee will periodically review (no less than every five years or more if required by the Amended Settlement Agreement or the Court) the current medical and scientific literature, as well as changes in Food and Drug Administration (FDA) approvals, for evidence that modifications should be made to the Medical Monitoring Program.

Modifications of the Medical Monitoring Program will be made based on these reviews assuring that accepted standards of care are maintained in the Program.

**E. List of Screening Questionnaire Standardized Scales and Cut Scores**

21. A Class Member who meets the Cut Score on any one or more of the five standardized scales, and who does not score above the Cut Score on the symptom validity measure (SIMS), will screen in for the next phase of evaluation through the Medical Monitoring Program.

<b>Domain</b>	<b>Test</b>	<b>Cut Scores</b>
<b>Mood/Distress</b>	Beck Depression Inventory II (BDI-II) (for <55 year olds)	Total Score $\geq 20$
	Geriatric Depression Scale – 15 Item (GDS) (for >55 year olds)	Total Score $\geq 5$
	Brief Symptom Inventory – 18 Item (BSI-18)	T-score score of $\geq 63$ on any two symptom scales (Anxiety, Depression, Somatization) OR on the summary Global Severity Index (GSI)
<b>Behavior/Executive Functioning</b>	Behavior Rating Inventory for Executive Functioning – Adult Version (BRIEF-A)	Global Executive Composite (GEC) T-Score $\geq 65$ Behavioral Regulation Index (BRI) T-Score $\geq 65$ Metacognition Index (MI) T-Score $\geq 65$
<b>Cognitive Functioning</b>	Everyday Cognition (eCog)	Total ECog score (sum of all completed items, divided by the number of items completed) $\geq 2.12$
<b>Functional Independence</b>	Functional Assessment Questionnaire	Total Score $\geq 9$
<b>Symptom Validity</b>	Structured Inventory of Malingered Symptomatology (SIMS)	If Total Score $> 16$ , Class Member would <u>not</u> be referred for Clinical Evaluation due to expected exaggeration/feigning of symptoms.



### III. NCAA MEDICAL MONITORING PROGRAM SCREENING QUESTIONNAIRE

#### A. Section One: History

##### A. Your BACKGROUND Information:

Name:

Date of Birth:

Age:

Gender:

Race: White (not of Hispanic/Latino origin)

Black/African American

American Indian/Alaska Native

Asian

Native Hawaiian or other Pacific Islander

Ethnicity: Hispanic/Latino Origin; Yes No

Are you currently employed: Yes No

If no: Unemployed (seeking employment) , Disabled, Retired

Occupation: (Use Federal Occupation List Drop Down)

Country of Birth: (Use Drop Down)

##### B. FAMILY History

Father (Biological) living.? Y/N. *If yes*, age: \_\_\_\_\_

*If no*, age at death: \_\_\_\_\_; Cause of death:

\_\_\_\_\_  
Mother (Biological) living? Y/N.

*If no*, age at death: \_\_\_\_\_; Cause of death:

\_\_\_\_\_  
Number of biological siblings \_\_\_\_\_

For each biological sibling – is he/she living.? Y/N.

*If yes*, age: \_\_\_\_\_

*If no*, age at death: \_\_\_\_\_; Cause of death:

\_\_\_\_\_  
***Has anyone in your immediate family ever been diagnosed with: Each “No” or “IDK” answer will skip to next question***

Dementia (including Alzheimer’s Disease and Senility): Yes/No/IDK

*If yes*, please identify who was diagnosed with dementia.

**Drop down:** Mother, Father, Biological sibling, Grandparent (maternal and paternal)

*For each yes:* Are they Living, Diagnosis (Drop Down), and  
Approximate Age at Diagnosis

Parkinson’s Disease: Yes/No/IDK

*Same as Above*

ALS Disease (Amyotrophic lateral sclerosis - "Lou Gehrig's Disease"): Yes/No/IDK

*Same as Above*

MS Disease (Multiple Sclerosis): Yes/No/IDK

*Same as Above*

Migraine headaches: Yes/No/IDK

*Same as Above*

*ADD, ADHD, or other Learning Disability*

*Same as above*

Depression? Yes/No/IDK

*If yes*, please identify who was diagnosed with Depression.

**Drop down:** Mother, Father, Biological Sibling, Grandparent (maternal and paternal)

*For each yes:* Are they Living, Diagnosis (Drop Down), and Approximate Age at Diagnosis

*Anxiety Disorder or Panic Attacks*

*Same as above*

Post-Traumatic Stress Disorder

*Same as above*

Bipolar Disorder/Manic Depression Yes/No/IDK

*Same as Above*

Schizophrenia or Other Psychotic Conditions Yes/No/IDK

*Same as Above*

### **C. Tell us about your EDUCATION**

#### ***High School***

Name of High School(s)

\_\_\_\_\_ (*Drop down if more than one*)

City \_\_\_\_\_ State/Province \_\_\_\_\_ Zip  
Code \_\_\_\_\_

Type of school: Public \_\_\_\_\_ Private \_\_\_\_\_

Home Schooled: No \_\_\_\_\_ Yes \_\_\_\_\_ Number of years home schooled \_\_\_\_\_

High School GPA: \_\_\_\_\_ (Estimate)

SAT/ACT Scores: SAT: Verbal \_\_\_\_\_ Quantitative \_\_\_\_\_ Writing \_\_\_\_\_

ACT: \_\_\_\_\_

Did you take the TOEFL? Yes No

*If yes*, Total Score? \_\_\_\_\_ -

Were you retained/held back in any \_\_\_\_\_ grade? Y/N. *If yes, which?*

Did you skip any grade? Y/N. *If yes, which?*

Did you attend any "special education" classes? Y/N

*If yes*, please describe: \_\_\_\_\_

### **College**

How many college degrees have you been awarded? \_\_\_\_\_

*Program will ask the following for each of the degrees noted above.*

Degree \_\_\_\_\_ Major \_\_\_\_\_ Minor \_\_\_\_\_

Institution granting degree \_\_\_\_\_

Year entered program \_\_\_\_\_ Year Degree Completed \_\_\_\_\_

GPA at graduation \_\_\_\_\_ (Estimate)

If degree was attempted but not completed, reason for leaving?

\_\_\_\_\_

### **Post-Graduate/Professional**

Please indicate which post-graduate degree(s) you have obtained?

*Drop down (including "add degree" for those with multiple degrees)*

Field of Study \_\_\_\_\_

Degree Granting Institution \_\_\_\_\_

## **D. Tell us about your MEDICAL History**

### **1. Questions about your health**

What is your current weight? \_\_\_\_\_ (Pounds)

What is your height? \_\_\_\_\_ (inches)

What is the least you have weighed in the past 5 years? \_\_\_\_\_

What is the most you have weighed in the past 5 years? \_\_\_\_\_

\*Have you had recent unexplained/unintended weight gain? Y/N

*If yes*, Please explain \_\_\_\_\_

\*Have you had recent unexplained/unintended weight loss? Y/N

*If yes*, Please explain \_\_\_\_\_

On average, how many hours do you sleep at night? \_\_\_\_\_

Are you frequently tired? Y/N

Are you having trouble sleeping? Y/N

*If yes*, Please explain:

\_\_\_\_\_

Have you ever been diagnosed with a sleep disorder? *If yes*, Diagnosis and age at diagnosis

Do you drink alcoholic beverages? Y/N

*If yes*, how many drinks per week (on average)?

Have you ever been diagnosed with alcoholism or alcohol dependence? Y/N

Are you currently taking any prescription drugs? Y/N

*If yes*, Please list each drug and when you began taking it

\_\_\_\_\_

Are you currently taking any over-the-counter drugs on a daily basis? Y/N

*If yes*, Please list each drug and when you began taking it

---

Are you currently taking any narcotics for pain (irrespective of whether prescribed by a physician)?

*If yes*, Please list each drug and when you began taking it

---

Do you currently use medicinal or recreational marijuana? Y/N

*If yes*, how often do you smoke per week (on average)?

Do you use recreational drugs (other than marijuana)? Y/N

*If yes*, Please list each drug and when you began taking it

---

*For each drug*, Please identify how often you use the drug per week

---

***Have you ever....***

Yes   No   Been denied or restricted from participation in sports for any reason  
*If yes*, was this because of: injury\_(Y/N)\_ ineligibility \_(Y/N)\_\_\_\_\_

**E. Neurological/Psychological/Psychiatric History (*Have you ever or now have*)**

Yes   No   Been diagnosed/treated for ALS  
*If yes*, age at diagnosis?

Yes   No   Been diagnosed/treated for Parkinson's Disease  
*If yes*, age at diagnosis?

Yes   No   Been diagnosed/treated for Multiple Sclerosis (MS)  
*If yes*, age at diagnosis?

Yes   No   Been diagnosed/treated for Mild Cognitive Impairment (Pre-Dementia)  
*If yes*, age at diagnosis?

Yes   No   Been diagnosed/treated for any type of dementia (including Alzheimer's Disease, Senility, Vascular, Lewy-Body, Fronto-temporal))  
*If yes*, Please identify the diagnosis (Drop Down)  
Age at diagnosis?

Yes   No   Been diagnosed/treated for Stroke/CVA  
*If yes*, how many?  
For each, age at diagnosis?

Yes   No   Been diagnosed/treated for Epilepsy or Seizure Disorder?  
*If yes*, please identify the diagnosis (**drop down**)  
Age at diagnosis?  
Have you been or are currently taking any medications for this condition?

*If yes*, please list the medication(s) \_\_\_\_\_

Did you require any surgical intervention? Y/N

Yes    No    Been formally diagnosed/treated for a Headache Disorder (including migraines)?

*If yes*, Migraine Y/N

Non-Migraine, Y/N

Age at diagnosis?

Have you been or are currently taking any medications for this condition?

*If yes*, please list the medication(s) \_\_\_\_\_

Do you still experience headaches? Y/N

    If yes, how often?

Yes    No    Been diagnosed/treated for any other Neurological or Brain Disease/Condition?

*If yes*, please list the disorder/condition \_\_\_\_\_

Age at diagnosis?

Yes    No    Been diagnosed/treated for depression

*If yes*, Please list your diagnosis (if known) (Drop Down)

Age at diagnosis?

Have you been or are currently taking any medications for depression?

*If yes*, please list the medication(s) \_\_\_\_\_

Inpatient hospitalization Y/N

*If yes*, please enter the number of times you were hospitalized.

*For each hospitalization*

    for how long? \_\_\_\_\_ days

    Voluntary? Y/N

    ECT/Shock Therapy: Y/N

Yes    No    Been diagnosed/treated for Bipolar Disorder/Manic Depression

*If yes*, Please list your diagnosis (if known) (Drop Down)

Age at diagnosis?

Have you been or are currently taking any medications for Bipolar Disorder?

*If yes*, please list the medication(s) \_\_\_\_\_

Inpatient hospitalization Y/N

*If yes*, please enter the number of times you were hospitalized.

*For each hospitalization*

    for how long? \_\_\_\_\_ days

    Voluntary? Y/N

Yes    No    Been diagnosed/treated for Schizophrenia or other Psychotic Disorder

*If yes*, Please list your diagnosis (if known) (Drop Down)

Age at diagnosis?

Have you been or are currently taking any medications for this condition?

*If yes*, please list the medication(s) \_\_\_\_\_

Inpatient hospitalization Y/N

*If yes*, please enter the number of times you were hospitalized.

*For each hospitalization*

for how long? \_\_\_\_\_ days

Voluntary? Y/N

Yes No Been diagnosed/treated for Anxiety Disorder or Panic Attacks or post-traumatic stress disorder?

*If yes*, Please list your diagnosis (if known)

Age at diagnosis?

Have you been or are currently taking any medications for this condition?

*If yes*, please list the medication(s) \_\_\_\_\_

Inpatient hospitalization Y/N

*If yes*, please enter the number of times you were hospitalized.

*For each hospitalization*

for how long? \_\_\_\_\_ days

Voluntary? Y/N

Yes No Been diagnosed/treated for Personality Disorder?

*If yes*, Please list your diagnosis (if known)

Age at diagnosis?

Have you been or are currently taking any medications for this condition?

*If yes*, please list the medication(s) \_\_\_\_\_

Inpatient hospitalization Y/N

*If yes*, please enter the number of times you were hospitalized.

*For each hospitalization*

for how long? \_\_\_\_\_ days

Voluntary? Y/N

Yes No Been diagnosed with a learning disorder?

*If yes...*

What type of learning disorder do you have? **Drop Down** (Dyslexia/Reading, NonVerbal, Mathematic, Written Language, Foreign Language, Other)

Was the diagnosis based upon formal testing by a psychologist? \_\_\_\_\_

How old were you when you were diagnosed? \_\_\_\_\_

Did you have an Individualized Education Plan in school? Y/N

For which years in school \_\_\_\_\_

Did you have academic accommodations in college? Y/N

Yes No Have you ever been diagnosed with ADD/ADHD?

*If yes...*

What type of ADHD do you have? \_\_\_\_\_ Primarily Inattentive

\_\_\_\_\_ Primarily Hyperactive

\_\_\_\_\_ Combined

Was the diagnosis based upon formal testing by a psychologist? Y/N

How old were you when you were diagnosed? \_\_\_\_\_

Did you have an Individualized Education Plan in school? Y/N

Did you have academic accommodations in college? Y/N

Were you prescribed medications? Y/N

*If yes*, please list the medication (s): \_\_\_\_\_

Are you currently on the medication(s) listed above? Y/N

*If no*, how long did you take the medication? \_\_\_\_\_ Years

### **G. Sport Involvement/Exposure**

Did you play organized sports during your PRIMARY/ELEMENTARY School years (**grades 1-5**)? \_\_\_\_\_

Which sports? (drop down)

*For each sport*

Years played: Grade 1, 2, 3, 4, 5 (check those that apply)

Was the team part of the school system, youth league, or private team?

Did you play organized sports during your MIDDLE SCHOOL/JUNIOR High School years (**grades 6-8**)

*For each sport*

Which sports? (drop down)

Years played : Grade 6, 7, 8 (check those that apply)

Was the team part of the school system, youth league, or private team?

Did you play organized sports during your HIGH SCHOOL years (Grades 9-12)?

*For each sport*

Which sports? (drop down)

Years played : Grade 9, 10, 11, 12 (check those that apply)

Was the team part of the school system, youth league, or private team?

Did you play organized sports during your HIGH SCHOOL years (Grades 9-12)?

*For each sport*

Which sports? (drop down)

Years played : Grade 9, 10, 11, 12 (check those that apply)

Was the team part of the school system, youth league, or private team?

Did you play organized sports between High School and College?

*For each sport*

Which sports? (drop down)

Number of Years played:

Was the team part of the school system, youth league, or private team?

Did you play organized sports during your COLLEGE years (Other than NCAA Interscholastic Sports)?

*For each sport*

Which sports? (drop down)

How many years played?

Type of team? Club, Intramural, "Adult" league, Local/Community League

## NCAA Interscholastic Sports

College/University:

DI, DII, DIII:

Sport(s) Played (drop down):

For each: Position? (drop down)

How many years played

Post College Athletic Activity:

Professional Yes, No

If yes, which sport (Drop Down)

How many seasons did you play?

Semi-Professional: Yes No

If yes, which sport (Drop Down)

How many seasons did you play?

Recreational Leagues: Yes No

If yes, which sport (Drop Down)

How many seasons did you play?

## H. Concussion History

Have you ever been medically diagnosed with a concussion while playing for an NCAA institution? Y/N

*If yes...*

How many times were you diagnosed with a concussion while playing for an NCAA institution? \_\_\_\_\_

*The program will automatically populate each of the questions for the number of concussions listed above.*

Date of concussion: Month\_\_\_\_\_ Year\_\_\_\_\_

Which sport were you playing at the time of the concussion?

What position did you play at the time of injury?

Did the injury occur during a game or practice?

How did the injury occur?

Head to head contact

Head to knee or other body part other than head

Head to ball or other equipment (e.g., stick, goal post, bat)

Head to playing surface (e.g., ground, field, ice, court, mat)

Blow to the chest or back

Other (please list) \_\_\_\_\_

Did you go to the hospital for this concussion? *If yes,*

Were you admitted-to the hospital overnight? Y/N

*If yes,* how many days? \_\_\_\_\_

Were any imaging studies of your brain conducted (e.g., X ray, CT scan, MRI)?

Y/N



*If yes*, were the results (Please check)

Normal \_\_\_\_\_ Abnormal \_\_\_\_\_

How much time passed before you returned to play? \_\_\_\_\_

**Symptoms:**

- a. Did you lose consciousness? No \_\_\_\_\_ Yes \_\_\_\_\_

*If yes*, for how long?

\_\_\_\_\_momentary \_\_\_\_\_ <1 minute \_\_\_\_\_2-5 min \_\_\_\_\_6-10 min \_\_\_\_\_>10 min

- b. Did you have any trouble remembering events before the injury?

No \_\_\_\_\_ Yes \_\_\_\_\_

*If yes*, for how long?

\_\_\_\_\_ less than 5 min \_\_\_\_\_5-30 min \_\_\_\_\_31-60 min \_\_\_\_\_ 2-5 hours \_\_\_\_\_ 24 hours  
\_\_\_\_\_>24 hours

- c. Did you have any trouble remembering the injury itself?

No \_\_\_\_\_ Yes \_\_\_\_\_

- d. Did you have any trouble remembering events after the injury?

No \_\_\_\_\_ Yes \_\_\_\_\_

*If yes*, for how long?

\_\_\_\_\_ less than 5 min \_\_\_\_\_5-30 min \_\_\_\_\_31-60 min \_\_\_\_\_ 2-5 hours \_\_\_\_\_ 24 hours  
\_\_\_\_\_>24 hours

- e. Did you have trouble remembering...

Your name? Y/N

Where you lived? Y/N

Remembering important numbers? (e.g. SSN, telephone number) Y/N

**2. Please list the primary symptoms for this concussion, how long each lasted, and the extent to which it negatively affected your functioning.**

- a. Drop down of Symptoms (Partial PCCS) (Choose as many as apply).

i. For each, How long? \_\_\_\_\_(days)

- ii. To what extent did this symptom disrupt/interfere with your normal life functioning?

(0) Not at all disruptive

(1) Mildly disruptive

(2) Annoying but not overly disruptive

(3) Moderately Disruptive

(4) Prevented me from engaging in important activities

(5) Almost took over my life

(6) Completely disrupted my life

*Additional symptoms as needed.....*

Have you ever been medically diagnosed with a concussion outside of your involvement playing an NCAA-sanctioned sport at an NCAA \_\_\_\_\_ institution?

*If yes*, how many times? \_\_\_\_\_

*The program will automatically populate each of the questions for the number of concussions listed above.*

How did the injury occur? \_\_\_\_\_

Date of concussion: Month \_\_\_\_\_ Year \_\_\_\_\_

Did you go to the hospital for this concussion? *If yes*,

Were you admitted-to the hospital overnight? Y/N

*If yes*, how many days? \_\_\_\_\_

Were any imaging studies of your brain conducted (e.g. ,X ray, CT scan, MRI)?  
Y/N

*If yes*, were the results (Please check)

Normal \_\_\_\_\_ Abnormal \_\_\_\_\_

1. Symptoms:

a. Did you lose consciousness? No \_\_\_\_\_ Yes \_\_\_\_\_

*If yes*, for how long?

\_\_\_\_\_momentary \_\_\_\_\_ <1 minute \_\_\_\_\_ 2-5 min \_\_\_\_\_ 6-10 min \_\_\_\_\_ >10 min

b. Did you have any trouble remembering events before the injury?

No \_\_\_\_\_ Yes \_\_\_\_\_

*If yes*, for how long?

\_\_\_\_\_ less than 5 min \_\_\_\_\_ 5-30 min \_\_\_\_\_ 31-60 min \_\_\_\_\_ 2-5 hours \_\_\_\_\_ 24 hours  
\_\_\_\_\_ >24 hours

c. Did you have any trouble remembering the injury itself?

No \_\_\_\_\_ Yes \_\_\_\_\_

d. Did you have any trouble remembering events after the injury?

No \_\_\_\_\_ Yes \_\_\_\_\_

*If yes*, for how long?

\_\_\_\_\_ less than 5 min \_\_\_\_\_ 5-30 min \_\_\_\_\_ 31-60 min \_\_\_\_\_ 2-5 hours \_\_\_\_\_ 24 hours  
\_\_\_\_\_ >24 hours

e. Did you have trouble remembering...

Your name? Y/N

Where you lived? Y/N

Remembering important numbers? (e.g., SSN, telephone number) Y/N

**3. Please list the primary symptoms for this concussion, how long each lasted, and the extent to which it negatively affected your functioning.**

a. Drop down of Symptoms (Partial PCCS) (Choose as many as apply).

i. For each, How long? \_\_\_\_\_(days)

ii. To what extent did this symptom disrupt/interfere with your normal life functioning?

(0) Not at all disruptive

(1) Mildly disruptive

(2) Annoying but not overly disruptive

- (3) Moderately Disruptive
- (4) Prevented me from engaging in important activities
- (5) Almost took over my life
- (6) Completely disrupted my life

*Additional symptoms as needed.....*

***Have you ever experienced any of the following but were not diagnosed with a concussion:  
(List each of the primary questions first then populate based on which they endorse)***

1. Did you ever sustain loss of consciousness (blacked out) following a hit to the head or body? Y/N

*If yes*, how many times? At what age?

How long were you unconscious?

\_\_\_\_\_ momentary \_\_\_\_\_ <1 minute \_\_\_\_\_ 2-5 min \_\_\_\_\_ 6-10 min \_\_\_\_\_ >10 min

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Did you go to the hospital for this loss of consciousness? *If yes*,

Were you admitted to the hospital overnight? Y/N

*If yes*, how many days? \_\_\_\_\_

Were any imaging studies of your brain conducted (e.g., X ray, CT scan, MRI)?  
Y/N

*If yes*, were the results (Please check)

Normal \_\_\_\_\_ Abnormal \_\_\_\_\_

2. Did you ever sustain a hit to the head or body that left you momentarily dazed or confused? Y/N

*If yes*, how many times? At what age?

How long were you dazed/confused?

\_\_\_ less than 5 min \_\_\_ 5-30 min \_\_\_ 31-60 min \_\_\_ 2-5 hours \_\_\_ 24 hours  
\_\_\_\_ >24 hours

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Did you seek treatment for this condition? Y/N

*If yes*, what was the diagnosis? \_\_\_\_\_

Were you held out from play? If yes, how long?

3. Did you ever sustain a hit to the head or body that caused you to lose memory for

events prior to the injury? Y/N

*If yes*, how many times? At what age?

How long did you lose memory for events prior to the injury?

\_\_\_ less than 5 min \_\_\_ 5-30 min \_\_\_ 31-60 min \_\_\_ 2-5 hours \_\_\_ 24 hours  
\_\_\_ >24 hours

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Did you seek treatment for the memory disturbance? Y/N

*If yes*, what was the  
diagnosis? \_\_\_\_\_

Were you held out from play? If yes, how long?

4. Did you ever sustain a hit to the head or body that caused you to lose memory of the injury? Y/N

*If yes*, how many times? At what age?

How long did you lose memory for events of the injury?

\_\_\_ less than 5 min \_\_\_ 5-30 min \_\_\_ 31-60 min \_\_\_ 2-5 hours \_\_\_ 24  
hours \_\_\_ >24 hours

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Did you seek treatment for the memory disturbance? Y/N

*If yes*, what was the  
diagnosis? \_\_\_\_\_

Were you held out from play? If yes, how long?

5. Did you ever sustain a hit to the head or body that caused you to lose memory for events after the injury? Y/N

*If yes*, how many times? At what age?

How long did you lose memory for events after the injury?

\_\_\_ less than 5 min \_\_\_ 5-30 min \_\_\_ 31-60 min \_\_\_ 2-5 hours \_\_\_ 24  
hours \_\_\_ >24 hours

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Were you held out from play? If yes, how long?

6. Did you ever sustain a hit to the head or body that caused dizziness or loss of balance? Y/N

*If yes*, how many times? At what age?

How long did the dizziness/loss of balance last?

\_\_\_ less than 5 min \_\_\_ <12 hours \_\_\_ 1 day \_\_\_ 2 weeks \_\_\_ 1 month

\_\_\_\_>1 month, please indicate how long in months \_\_\_\_\_

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Did you seek treatment for the dizziness/loss of balance? Y/N

*If yes*, what was the  
diagnosis? \_\_\_\_\_

Were you held out from play? If yes, how long?

7. Did you ever sustain a hit to the head or body that led to feelings of being “out of it,” “in a fog,” or “not quite right”? Y/N

*If yes*, how many times? At what age?

How long did the symptoms last?

\_\_\_ less than 5 min \_\_\_<12 hours \_\_\_1 day \_\_\_ 2 weeks \_\_\_ 1 month

\_\_\_\_>1 month, please indicate how long in months \_\_\_\_\_

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Were you held out from play? If yes, how long?

8. Did you ever sustain a hit to the head or body that led to headaches? Y/N

*If yes*, how many times? At what age?

How long did you have headaches?

\_\_\_ less than 5 min \_\_\_<12 hours \_\_\_1 day \_\_\_ 2 weeks \_\_\_ 1 month

\_\_\_\_>1 month, please indicate how long in months \_\_\_\_\_

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both

Did you seek treatment for these headaches? Y/N

*If yes*, what was the  
diagnosis? \_\_\_\_\_

Were you held out from play? If yes, how long?

9. Did you ever sustain a hit to the head or body that led to trouble thinking such as poor attention/concentration, problems with memory, and problems learning?  
Y/N

*If yes*, how many times? At what age?

How long did you have problems with your thinking abilities?

\_\_\_ less than 5 min \_\_\_<12 hours \_\_\_1 day \_\_\_ 2 weeks \_\_\_ 1 month

\_\_\_\_>1 month, please indicate how long in months \_\_\_\_\_

Were alcohol or recreational drugs involved in this injury?

If yes, which? Alcohol, Drugs, Both  
Did you have a formal assessment of these difficulties? Y/N  
*If yes*, what was the diagnosis?

Were you held out from play? If yes, how long?

10. Did you ever sustain a hit to the head or body that led to changes in mood or personality? Y/N

*If yes*, how many times? At what age?  
How long did you have problems with your mood/personality?  
\_\_\_ less than 5 min \_\_\_ <12 hours \_\_\_ 1 day \_\_\_ 2 weeks \_\_\_ 1 month  
\_\_\_ >1 month, please indicate how long in months \_\_\_\_\_

Were alcohol or recreational drugs involved in this injury?  
If yes, which? Alcohol, Drugs, Both  
Did you have a formal assessment of these difficulties? Y/N  
*If yes*, what was the  
diagnosis? \_\_\_\_\_  
Were you held out from play? If yes, how long?

11. Did you ever sustain a hit to the head or body that led to difficulties with sleep?  
Y/N

*If yes*, how many times? At what age?  
How long did you have problems with sleep? \_\_\_\_\_ days  
Were alcohol or recreational drugs involved in this injury?  
If yes, which? Alcohol, Drugs, Both  
Did you have a formal assessment of these sleep difficulties, *e.g., sleeping more, less, or trouble falling asleep*? Y/N  
*If yes*, what was the diagnosis?  
Did you seek treatment for these problems? Y/N  
*If yes*, what was the  
diagnosis? \_\_\_\_\_  
Were you held out from play? If yes, how long?

## **J. Current Symptoms**

Standardized 22 item Post-Concussion Symptom Checklist – Rate symptoms as you are currently experiencing them

Please rate each item based on the following scale

*0= None....3=Moderate...6=Severe*

Headache	0	1	2	3	4	5	6
Pressure in head	0	1	2	3	4	5	6

Neck pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling in a fog	0	1	2	3	4	5	6
Don't feel right	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
Feeling more emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or anxious	0	1	2	3	4	5	6

Do the symptoms get worse with physical activity, including at work? Y N

*If yes*, explain: \_\_\_\_\_

Do the symptoms get worse with mental activity, including at work? Y N

*If yes*, explain: \_\_\_\_\_

How different are you acting compared to your usual self? (circle)

Normal 0 1 2 3 4 5 6 Very Different

*Program will calculate:*

**Total number of symptoms** (Maximum possible 22) \_\_\_\_\_

**Symptom severity score:** \_\_\_\_\_

*(Note: The program will automatically populate any of the symptoms endorsed above at a level of 1 or greater and ask the following of each symptom endorsed:*

*To what extent did you experience this symptom prior to playing an NCAA sport?*

*0= Never, 1= Rarely, 2= Occasionally, 3= Much of the time, 4= more than half of the time, 5 = All of the time)*





**B. Section Two: Standardized Scales**

**1. Beck Depression Inventory-II (*Used for Class Members who are Less Than 55 Years Old*)**

**Description from the Test Publisher:** PsychCorp, part of Pearson Education

<http://www.pearsonclinical.com/psychology/products/100000159/beck-depression-inventorvii-bdi-ii.html#tab-details>

“This new edition of the Beck Depression Inventory®, the most widely used instrument for detecting depression, takes just five minutes to complete and is more clinically sensitive than ever.

***New Items***

Like its predecessor, the BDI–II consists of 21 items to assess the intensity of depression in clinical and normal patients. Each item is a list of four statements arranged in increasing severity about a particular symptom of depression. These new items bring the BDI–II into alignment with DSM–IV criteria.

Items on the new scale replace items that dealt with symptoms of weight loss, changes in body image, and somatic preoccupation. Another item on the BDI that tapped work difficulty was revised to examine loss of energy. Also, sleep loss and appetite loss items were revised to assess both increases and decreases in sleep and appetite.

***Time Frame Increased***

Current DSM–IV guidelines require assessing depression symptoms over the preceding two weeks. The time frame for the response set in the new edition was changed from one week to two to comply.

***Improved Clinical Sensitivity***

After testing original and new items on a large clinical sample (N = 500), test developers compared item-option characteristic curves. The new editions showed improved clinical sensitivity, with the reliability of the BDI–II (Coefficient Alpha = .92) higher than the BDI (Coefficient Alpha = .86).”

**BDI-II Sample Items:**

(Please Note that these items are copyrighted and should not be reproduced without permission of the publisher; because of copyright issues, only three sample items are presented here.)

Each of the 21 items corresponding to specific symptoms of depression is summed to give a total score. There is a four-point scale for each item ranging from 0 to 3. On two items (e.g., Item 16 below) there are seven options to indicate either an increase or decrease of sleep and appetite.

Item 1:

- 0 - I do not feel sad
- 1 - I feel sad much of the time
- 2 - I am sad all the time
- 3 - I am so sad or unhappy that I can't stand it

Item 2:

- 0 - I am not discouraged about my future

- 1 - I feel more discouraged about my future than I used to be
- 2 - I do not expect things to work out for me
- 3 - I feel my future is hopeless and will only get worse

Item 16:

- 0 - I have not experienced any change in my sleeping pattern
- 1 - I sleep somewhat more than usual/ I sleep somewhat less than usual
- 2 - I sleep a lot more than usual/ I sleep a lot less than usual
- 3 - I sleep most of the day/I wake up 1-2 hours early and can't get back to sleep

**BDI-II Selection of Cut Score:**

Cut Score guidelines for the BDI-II are provided in the test manual with the recommendation that thresholds be adjusted based on the specific characteristics of the sample being examined, and the specific purpose for its use. A total score of 0-13 is considered “minimal” depression, 14-19 is “mild” depression, 20-28 is “moderate” depression, and 29-63 is “severe” depression. We have selected a Cut Score of  $\geq 20$ .

**BDI-II Selected Bibliography:**

- Beck AT, Steer RA, Brown GK. Beck Depression Inventory-II (BDI-II) Professional Manual. 1996; San Antonio, TX: Psychological Corporation.
- Beck AT, Steer RA, Ball R, Ranieri W. Comparison of Beck Depression Inventories -IA and -II in psychiatric outpatients. J Pers Assess. 1996; 67(3): 588-97.
- Steer RA, Ball R, Ranieri WF, Beck AT. Dimensions of the Beck Depression Inventory-II in clinically depressed outpatients". J Clin Psychology. 1999; 55 (1): 117–28.
- Storch EA, Roberti JW, Roth DA (2004). "Factor structure, concurrent validity, and internal consistency of the Beck Depression Inventory-Second Edition in a sample of college students". Depression and Anxiety. 2004; 19 (3): 187–9.
- Maizels M, Smitherman TA, Penzien DB. A Review of Screening Tools for Psychiatric Comorbidity in Headache Patients. Headache. 2006; 46 [Suppl 3]:(S98-S109).

## 2. Geriatric Depression Scale (GDS) – 15 Item (*Used for Class Members who are 55 Years Old or Greater*)

### Description:

The Geriatric Depression Scale (GDS) - Short Form is a 15-item self-report measure of depressive symptoms designed specifically for use in the elderly. The items are answered with a yes/no format, which is simpler than scales with Likert-type (e.g., 4-point) responses, especially in individuals with cognitive impairment. It is widely used in clinical geriatric settings as well as in dementia research studies. It has extensive psychometric and validation data.

### Items:

1. Are you basically satisfied with your life? **YES** / NO
2. Have you dropped many of your activities and interests? **YES** / NO
3. Do you feel that your life is empty? **YES** / NO
4. Do you often get bored? **YES** / NO
5. Are you in good spirits most of the time? **YES** / NO
6. Are you afraid that something bad is going to happen to you? **YES** / NO
7. Do you feel happy most of the time? **YES** / NO
8. Do you often feel helpless? **YES** / NO
9. Do you prefer to stay at home, rather than going out and doing new things? **YES** / NO
10. Do you feel you have more problems with memory than most? **YES** / NO
11. Do you think it is wonderful to be alive now? **YES** / NO
12. Do you feel pretty worthless the way you are now? **YES** / NO
13. Do you feel full of energy? **YES** / NO
14. Do you feel that your situation is hopeless? **YES** / NO
15. Do you think that most people are better off than you are? **YES** / NO

Answers in **bold** contribute to the depression score.

### Selection of Cut Score:

The total score of the GDS-15 is a sum of each of the items answered with bolded yes or no indicative of depression resulting in a range of 0-15. Scores on the GDS and the BDI-II have been found to be very highly correlated. Based on guidelines in the scientific and clinical literature, a score of 5 or more is indicative of depression. This will be the initial Cut Score.

### Selected Bibliography:

- Sheikh JI, Yesavage JA. Geriatric Depression Scale (GDS): recent evidence and development of a shorter version. *Clin Gerontol* 1986;165-17
- Almeida OP, Almeida SA. Short versions of the geriatric depression scale: a study of their validity for the diagnosis of a major depressive episode according to ICD-10 and DSM-IV. *Int J Geriatr Psychiatry*. 1999; 14(10):858-65.
- Fujishima M, Maikusa N, Nakamura K, Nakatsuka M, Matsuda H, Meguro K. Mild cognitive impairment, poor episodic memory, and late-life depression are associated with cerebral cortical thinning and increased white matter hyperintensities. *Front Aging Neurosci*. 2014; 7;6:306.

### 3. Brief Symptom Inventory (BSI) 18

**Description from the Test Publisher: PsychCorp, part of Pearson Education**

<http://www.pearsonclinical.com/psychology/products/100000638/brief-symptom-inventory-18-bsi-18.html#tab-details>

“The Brief Symptom Inventory 18 (BSI 18) is designed with reliability in mind. The BSI 18 assessment gathers patient-reported data to help measure psychological distress and psychiatric disorders in medical and community populations. As the latest in an integrated series of test instruments that include the SCL-90-R®, BSI® (53 questions), and DPRS® instruments, the BSI 18 test offers a more effective, easy-to-administer tool to help support clinical decision-making and monitor progress throughout treatment.”

#### **Key Features**

- The BSI 18 test can be completed in approximately 4 minutes. Designed to be brief and easy to administer, the BSI 18 assessment is well-suited for helping measure symptom change throughout treatment.
- The test helps measure three primary symptom dimensions and is designed to provide an overview of a patient's symptoms and their intensity at a specific point in time.
- Dimension and global scores from the BSI 18 test correlate highly (*i.e.*, > .90) with analogous scores from the SCL-90-R test based on a large community population.

#### **Scales**

##### **Symptom Scales**

SOM - Somatization

DEP - Depression

ANX - Anxiety

##### **Global Indices**

GSI - Global Severity Index, Helps measure overall psychological distress level

Psychometric Information

#### **Adult community norms**

The adult community norms are based on 1,122 individuals—605 males and 517 females.”

#### **Sample Items:**

**(Please Note that these items are copyrighted and should not be reproduced without permission of the publisher)**

The scale consists of 18 items each rated using a 5-point scale of (0) “not at all” to (4) “always.” Higher scores reflect greater levels of distress. Instructions ask the respondent how they have been feeling “during the past 7 days.” Sample items include:

- Feeling so restless you couldn't sit still.
- Feeling no interest in things.
- Pains in heart or chest.

#### **Selection of Cut Score:**

The test manual provides transformation of raw scores to standardized T-scores base on the normative samples. We will employ the following Cut Score guidelines from the test manual: A T-score of  $\geq 63$  on any two symptom scales (Anxiety, Depression, Somatization) OR on the summary Global Severity Index (GSI).

**Selected Bibliography:**

Derogatis L. BSI 18: Brief Symptom Inventory 18: Administration, Scoring, and Procedure Manual. 2001; Minneapolis, MN: NCS Pearson

Prinz U, Nutzinger DO, Schulz H, Petermann F, Braukhaus C, Andreas S. Comparative psychometric analyses of the SCL-90-R and its short versions in patients with affective disorders. BMC Psychiatry. 2013; 13:104.

#### **4. Behavior Rating Inventory for Executive Functioning – Adult Version (BRIEF-A)**

##### **Description from the Test Publisher: Psychological Assessment Resources, Inc.**

<http://www4.parinc.com/Products/Product.aspx?ProductID=BRIEF-A>

The BRIEF-A is a 75 item standardized self-report (though there is also an informant-report version) measure of various aspects of Executive Functioning and related cognitive and behavioral difficulties. Each item is rated on a 3-point scale: N=Never, S=Sometimes, O=Often. Based on factor analyses and theoretical decision-making, there are nine non-overlapping clinical scales: Inhibit, Self-Monitor, Plan/Organize, Shift, Initiate, Task Monitor, Emotional Control, Working Memory, and Organization of Materials. In addition to these clinical scales, there are two broad indexes (Behavioral Regulation and Metacognition), an overall summary score, and three validity scales (Negativity, Inconsistency, and Infrequency). The BRIEF-A has been widely researched and has been found to be useful in a wide variety of neurological and psychiatric disorders such as attention disorders, learning disabilities, autism spectrum disorders, traumatic brain injury, multiple sclerosis, depression, mild cognitive impairment, dementia, and schizophrenia. The test has been normed on a sample of 1,136 adults from a diverse range of racial/ethnic backgrounds, educational backgrounds, and geographic regions. The BRIEF-A has excellent psychometric properties and has been found to have clinical utility as an ecologically valid and sensitive measure of executive functioning in individuals with a range of conditions and across a wide range of ages.

##### **Sample Items:**

(Please Note that these items are copyrighted and should not be reproduced without permission of the publisher)

- The following is an example of an item included in the Emotional Control Scale:
  - I overreact to small problems.
- The following is an example of an item included in the Inhibit Scale:
  - I make inappropriate sexual comments.
- The following is an example of an item included in the Self-Monitor Scale:
  - I say things without thinking.

##### **Selection of Cut Score:**

The test manual provides transformation of raw scores to standardized T-scores base on the normative samples. We will employ the following Cut Score guidelines from the test manual for clinically-meaningful scores: A T-Score  $\geq 65$  on either the Global Executive Composite (GEC), the Behavioral Regulation Index (BRI), or the Metacognition Index (MI).

##### **Selected Bibliography:**

Roth RM, Isquith PK, Gioia GA. BRIEF-A: Behavior Rating Inventory of Executive Function—Adult Version: Professional Manual. 2005; Lutz, FL: Psychological Assessment Resources.



Seichepine DR, Stamm JM, Daneshvar DH, Riley DO, Baugh CM, Gavett BE, Tripodis Y, Martin B, Chaisson C, McKee AC, Cantu RC, Nowinski CJ, Stern RA. Profile of self-reported problems with executive functioning in college and professional football players. J Neurotrauma. 2013; 30, 1299-1304.

## 5. Everyday Cognition (eCog) Scale

### Description:

The eCog is a 39-item standardized self-report measure of neuropsychological functioning related to everyday functioning. The scale was developed designed to address key cognitive domains. Research findings indicate the presence of six domain factors and one global factor: everyday memory, everyday language (which includes everyday semantic knowledge), everyday visuospatial abilities, and the executive domains of everyday planning, organization, and divided attention. It has been shown to discriminate between cognitive healthy individuals, patients with mild cognitive impairment (MCI), and patients with dementia. Items are rated on a four-point scale: 1, better or no change compared to 10 years earlier; 2, questionable/occasionally worse; 3, consistently a little worse; 4, consistently much worse. Higher scores represent worse daily function. For the purpose of this Screening Questionnaire, the Global score, defined as the sum of all completed items divided by the number of items completed, will be used.

### Sample Items:

- Remembering a few shopping items without a list.
- Forgetting the names of objects.
- Communicating thoughts in conversation.
- Finding the way back to a meeting spot in a mall.
- Planning a big dinner, social event, birthday party, or club meeting.
- Planning a recreational outing.
- Carrying on a conversation when the TV is on in the room or while other people are talking.

### Selection of Cut Score:

A Cut Score of  $\geq 2.1$  is recommended in the literature to differentiate cognitively normal from impaired individuals (e.g., Farias et al., 2011).

### Selected Bibliography:

- Farias ST, Mungas D, Reed BR, Cahn-Weiner D, Jagust W, Baynes K, Decarli C. The measurement of everyday cognition (ECog): scale development and psychometric properties. Neuropsychology. 2008; 22(4):531-44.
- Farias ST, Mungas D, Harvey D, Simmons A, Reed BR, DeCarli C. The measurement of everyday cognition (ECog): Development and validation of a short form. Alzheimer Dementia. 2011; 7(6):593–601.
- Farias ST, Park LQ, Harvey DJ, Simon C, Reed BR, Carmichael O, Mungas D. Everyday cognition in older adults: associations with neuropsychological performance and structural brain imaging. J Int Neuropsychol Soc. 2013;19(4):430-41.
- Edmonds EC, Delano-Wood L, Galasko DR, Salmon DP, Bondi MW; Alzheimer's Disease Neuroimaging Initiative. Subjective cognitive complaints contribute to misdiagnosis of mild cognitive impairment. J Int Neuropsychol Soc. 2014; 20(8): 836–847.
- Rog LA, Park LQ, Harvey DJ, Huang CJ, Mackin S, Farias ST. The independent contributions of cognitive impairment and neuropsychiatric symptoms to everyday function in older adults. Clin Neuropsychol. 2014; 28(2):215-36.
- Park LQ, Harvey D, Johnson J, Farias ST. Deficits in Everyday Function Differ in AD

and FTD. *Alzheimer Dis Assoc Disord*. 2015 Jan 14. [Epub ahead of print]

## **6. Functional Activities Questionnaire (FAQ)**

### **Description:**

The Functional Activities Questionnaire (FAQ) is a commonly used, standardized measure of “instrumental activities of daily living” (IADLs), such as managing personal finances and preparing balanced meals. The FAQ is administered to thousands of research individuals across the United States each year as part of the National Alzheimer’s Coordinating Center (NACC) longitudinal research study taking place in 29 National Institute on Aging-funded Alzheimer’s Disease Centers (Weintraub et al., 2009). The FAQ is comprised on 10 items dealing with everyday activities. Each item is rated by the respondent on the following three-point scale:

- Dependent = 3
- Requires assistance = 2
- Has difficulty but does by self = 1
- Normal = 0
- Never did [the activity] but could do now = 0
- Never did and would have difficulty now = 1

Although the FAQ was initially developed to be completed by an informant (e.g., significant other who knows the individual well), it is also now routinely used as a self-report measure (e.g., Brown et al., 2011). It has been shown to be able to differentiate between cognitive healthy individuals, patients with mild cognitive impairment (MCI), and patients with dementia.

### **Sample Items:**

- Writing checks, paying bills, balancing checkbook.
- Traveling out of neighborhood, driving, arranging to take buses.
- Assembling tax records, business affairs, or papers.
- Remembering appointments, family occasions, holidays, medications.

### **Selection of Cut Score:**

The Total Score is the sum of the 10 items. A Cut Score of 9 (i.e., dependent in 3 or more activities) is typically used to indicate impaired function and possible cognitive impairment.

### **Selected Bibliography:**

- Brown PJ, Devanand DP, Liu X, Caccappolo E; Alzheimer's Disease Neuroimaging Initiative. Functional impairment in elderly patients with mild cognitive impairment and mild Alzheimer disease. Arch Gen Psychiatry. 2011; 68(6):617-26.
- Pfeffer RI, Kurosaki TT, Harrah CH, Jr, et al. Measurement of functional activities in older adults in the community. J Gerontol. 1982;37:323–329.
- Teng E, Becker BW, Woo E, Knopman DS, Cummings JL, Lu PH. Utility of the functional activities questionnaire for distinguishing mild cognitive impairment from very mild Alzheimer disease. Alzheimer Dis Assoc Disord. 2010;24(4):348-53.
- Weintraub, S., Salmon, D., Mercaldo, N., Ferris, S., Graff-Radford, N.R., Chui, H., et al. The Alzheimer’s Disease Centers’ Uniform Data Set (UDS): The neuropsychologic test battery. Alzheimer Dis Assoc Disord. 2009; 23(2), 91-101.

## **7. Structured Inventory of Malingered Symptomatology (SIMS)**

**Description from the Test Publisher: Psychological Assessment Resources, Inc.**

<http://www4.parinc.com/Products/Product.aspx?ProductID=SIMS>

“The SIMS is a 75-item, true-or-false screening instrument that assesses both malingered psychopathology and neuropsychological symptoms.

- Can be used as part of a battery of tests to provide convergent evidence of malingering.
- Recommended as part of a comprehensive approach to any evaluation in which alternative hypotheses for response patterns should be considered.
- Provides five scale domains—Psychosis, Low Intelligence, Neurologic Impairment, Affective Disorders, and Amnesic Disorders—as well as an overall score for probable malingering.
- Demonstrates sensitivity, specificity, and efficacy across both simulation and known-groups designs with honest responders, psychiatric patients, and clinical malingerers.
- Written at a 5th-grade reading level, the SIMS has demonstrated very good utility in identifying malingering across multiple studies.”

Each item is responded to with a True (or Usually True) or False (or Usually False) format.

### **Sample Items:**

(Please Note that these items are copyrighted and should not be reproduced without permission of the publisher)

- My past life and important events became a blur to me almost overnight.
- At times I’ve been unable to remember the names or faces of close relative so that they seem like complete strangers.
- I cannot remember whether or not I have been married.
- The voices that I hear, which others do not hear, have never stopped since they began.
- Once a week I suddenly find myself cold even though the actual temperature is warm.

### **Selection of Cut Score:**

The Cut Score is selected based on the recommendation from the Test Manual. If Total Score >16, the Class Member would not be referred for Clinical Evaluation due to expected exaggeration/feigning of symptoms.

### **Selected Bibliography:**

Jelicic M, Ceunen E, Peters MJ, Merckelbach H. Detecting coached feigning using the Test of Memory Malingered (TOMM) and the Structured Inventory of Malingered Symptomatology (SIMS). *J Clin Psychol*. 2011; 67(9):850-5.

Jelicic M, Merckelbach H, Candel I, Geraerts E. Detection of feigned cognitive dysfunction using special malinger tests: a simulation study in naïve and coached malingerers. *Int J Neurosci*. 2007;117(8):1185-92.

van Impelen A, Merckelbach H, Jelicic M, Merten T. The Structured Inventory of Malingered Symptomatology (SIMS): A Systematic Review and Meta-Analysis. *Clin Neuropsychol*. 2014; 28(8):1336-65.

Widows, M.R., & Smith, G.P.. *Structured Inventory of Malingered Symptomatology Professional Manual*. 2005; Odessa, FL: Psychological Assessment Resources

#### **IV. MEDICAL EVALUATIONS**

21. The Medical Science Committee has consulted and agreed on the scope of the Medical Evaluations, which will include a neurological examination, neuropsychological examination, mood and behavioral evaluation, and ancillary testing as needed.

22. First, the Medical Evaluation will include a neurological examination. The neurological examination will include:

a. a detailed mental status examination, which is a structured assessment of the Class Member's behavioral and cognitive functioning. It includes descriptions of the patient's appearance and general behavior, level of consciousness and attentiveness, motor and speech activity, mood and affect, thought and perception, attitude and insight, the reaction evoked in the examiner, and higher cognitive abilities. The specific cognitive functions of alertness, language, memory, constructional ability and abstract reasoning are the most clinically relevant.<sup>2</sup> This examination will also be augmented by the neuropsychological, cognitive, behavioral, and mood tests;

b. a cranial nerve examination, which is an examination of the twelve cranial nerves, sense of smell (I), visual fields and acuity (II), eye movements (III, IV, VI) and pupils (III, sympathetic and parasympathetic), sensory function of face (V), strength of facial (VII) and shoulder girdle muscles (XI), hearing (VIII, IX, X), taste (VII, IX, X), pharyngeal movement and reflex (IX, X), and tongue movements (XII);

c. motor system examination, which includes muscle strength, tone and signs of rigidity, posture, resting tremors, and abnormal movements;

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<sup>2</sup> Martin, Clinical Methods: The History, Physical, and Laboratory Examinations (3d ed.), Ch. 207.

d. sensory examination, which involves provoking sensations of fine touch, pain and temperature;

e. reflex assessment, which includes masseter, biceps and triceps tendon, knee tendon, ankle jerk and plantar reflex; and

f. balance assessment.

23. Next, the Medical Evaluation will include a neuropsychological examination.

24. The following tests and instruments will be used for the neuropsychological examination, divided by domain of functioning, as well as for the neurological examination:

Neurological and Neuropsychological Domains Examined and Tests	
Domain	Test
<b>Effort/Symptom Validity</b>	Word Memory Test (WMT)
<b>Est. Premorbid Intelligence</b>	Wide Range Achievement Test (WRAT-4) – Reading Subtest
<b>Attention and Psychomotor Speed</b>	Trail Making Part A
	WAIS-IV Digit Span Test
	WAIS-IV Coding Subtest
	PSU Cancellation Test
<b>Executive Function</b>	Controlled Oral Word Association Test (COWAT)
	Trail Making Test, Part B
	Delis-Kaplan Exec. Function System Color-Word Interference
	Wisconsin Card Sorting Test (WCST)
<b>Memory</b>	Hopkins Verbal Learning Test
	NAB Story Learning/WAIS-IV Logical Memory Subtest
	Rey-Osterrieth Complex Figure (ROCF) Immediate and Delayed Recall
<b>Language</b>	Verbal Fluency Test (Phonemic and Semantic)
	NAB Naming Test
<b>Visuospatial Ability</b>	Rey-Osterrieth Complex Figure (ROCF) Copy Condition
<b>Dementia Severity</b>	Functional Activities Questionnaire (FAQ) – Informant Based
	Clinical Dementia Rating (CDR) (to be administered to Class Members for whom neurodegenerative processes are suspected)

<b>Visual Tracking</b>	King-Devick Test
<b>Postural Stability</b>	Balance Error Scoring System (BESS)

25. Third, the Medical Evaluation will include a mood and behavioral evaluation. The assessment of mood and behavioral functioning will include: the *Hamilton Depression Rating Scale* and the *Columbia Suicide Severity Rating Scale*, both structured interviews; and the *Brief Inventory of Executive Functioning – Adult Version*, a paper and pencil rating scale that has a self-rating and an informant-rating, the latter to be completed by a spouse, significant other, adult child, friend, or other individual close to the Class Member when available. The neuropsychologist or another appropriate member of the clinic team (e.g., neuropsychiatrist, psychiatrist, clinical social worker) may conduct the interviews. In addition to these measures, the results from the questionnaire-based screening will be provided electronically to the clinician to be incorporated into the examination.

26. Finally, the Medical Evaluation may include ancillary testing. The evaluating neurologist will determine which, if any, ancillary tests may be medically necessary to complete the evaluation of the Class Member based on American Academy of Neurology clinical practice guidelines for the diagnosis and treatment of neurologic diseases.




## V. CONCLUSION

The medical science members of the Committee agree that the approach proposed in this report meets the standard of care and/or is best practice for the assessment and diagnosis of individuals that have played sports at NCAA member institutions.

Dated: April 9, 2015

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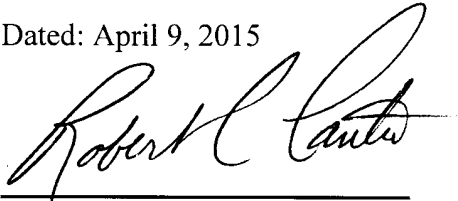
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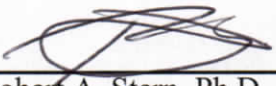
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**CERTIFICATE OF SERVICE**

The undersigned, an attorney, hereby certifies that on April 14, 2015 a true and correct copy of the foregoing was filed electronically via CM/ECF, which caused notice to be sent to all counsel of record.

By: /s/ Steve W. Berman